

SLAVERY AND AMERICAN AGRICULTURAL HISTORY

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Not many cliometricians are authentic agricultural historians, meaning historians who actually know something about soils, crops, livestock breeding, and farming techniques. My mentor Bill Parker was a rare example of a scholar who was both: a founder of the “new economic history,” and yet also a life-long student of the lives of American farmers and their families. Yet even Bill Parker, in his presidential address to this society, confessed to getting an A on an answer to the exam question, “Discuss the factors entering into the market price of a heifer,” while wondering all the time what a heifer was.¹

I can identify with that situation. In my case, engagement with agricultural history was a byproduct of a primary interest in the economics of American slavery, and such knowledge as I gained about the everyday realities of farming was relatively incidental. For me, agricultural history was an intermediate good rather than a final product, the facts of climate and soil often emerging more as inconvenient irritations to be explained away as opposed to essential features of history to be mastered. In this essay I propose to redress this personal history to some small degree, by reconsidering the relationship between slavery and American agricultural geography.

My immediate inspiration is the presidential address of Douglas Helms in 2000, which deployed modern soil classification surveys to show that most of the southeastern United States was distinctive in its limited endowment of essential plant elements such as phosphorus, potassium, magnesium, and calcium.² These southern “ultisols” (as contrasted with the richer “alfisols” and prairie “mollisols” that prevailed in the midwest) did not generate good native grasses and ruled out continuous cultivation. Although Douglas was careful to state that “soil quality or qualities must be viewed not as immutable but in relationship to other factors,” the temptation to interpret distinctive features of Southern agricultural history in light of this evidence is strong.

Indeed this intellectual strategy has a long history. One of its best articulations was presented at an Agricultural History Society session in 1974 by Julius Rubin, who saw himself as reviving an older tradition associated with U.B. Phillips, L.C. Gray, and Avery Craven.³ Rubin argued that in addition to low crop yields, the absence of deep frosts in the Lower South encouraged animal parasites like the kidney worm and the cattle tick, making it difficult for them to replicate the mixed husbandry that was so successful in northern states. Clearly the full economic history of the South must include such basic

climatological factors; but it would be a mistake on this account to read the institution of slavery out of the story, as some historians are tempted to do.

A related but distinct interpretive line starts from the proposition that the peculiarities of southern agricultural history derive from distinctive features of the particular crops in which the region specialized. Recognizable as the “staples thesis” of Canadian provenance, this view was extended to the South in 1961 by Douglass North, who maintained:

For our purposes, the South was a region characterized by production for the market of a number of agricultural staples in which slave labor was both the major capital investment and an important intermediate product. The nature of cotton production (and of tobacco, rice and sugar production), and the economic and social consequences of investment in this form of capital, affected not only the economic structure of the area, but molded the pattern of settlement and urbanization and the distribution of income as well.⁴

Mechanisms for staples effects include scale economies and skill requirements in production, linkages to local processing, and bulk without weight, which lowered inbound freight rates and thus discouraged the development of manufacturing. Historical geographer Carville Earle presents variations on the staples theme, in which the southern landscape was initially shaped by the transportation and processing properties of tobacco, while the nineteenth century choice of labor system was driven by the seasonality of labor requirements.⁵

The leading advocates of geographical determinism and the staples thesis have primarily been historians and geographers, but economic historians are also sometimes inclined to demote slavery to a subsidiary historical role, by explaining the geographic spread of the institution in terms of its affinity for particular crops. Stefano Fenoaltea argues that slavery was well-adapted to “effort-intensive” activities such as mining and sugar production, but not to “care-intensive” assignments such as olive oil, wine, and animal husbandry.⁶ Claudia Goldin and Kenneth Sokoloff suggest that slavery was well adapted to tobacco and cotton, because “females and children were relatively more productive in crops requiring extensive cultivation,” while cotton harvesting actually “favored the small.”⁷ Robert Fogel maintains that the geographic spread of slavery was firmly rooted in economies of scale derived from gang labor on large plantations, methods only effective in a handful of staple crops.⁸ More recently, Christopher Hanes postulates that the distribution of slavery in Anglo-America was dictated by the relative costs of

labor turnover in various economic activities.⁹

An Institutional Approach: Slavery as Property Rights

As formidable as this intellectual phalanx may appear, this essay takes a different approach in which the political history of slavery plays a larger role. There is no obvious or straightforward way to disentangle the effects of geography from the effects of slavery as an institution. The standard North-South comparisons combine both sets of effects. Indeed, prior to the American Revolution, it is difficult even to define the “effects of slavery” in a meaningful way, because slavery as a legal institution was recognized and practiced in all of the British North American colonies. Thus, during the colonial era, the geographic distribution of slaves was endogenously determined by the demand for slave labor in the various colonies. Evidently it is this information -- that ninety percent of the 1770 North American slave population was located in colonies that later became slave states -- that has led scholars to conclude that slavery did not “fit” northern agricultural crops and conditions.

Beginning with Vermont’s antislavery constitution of 1777, however, the picture changed. One by one the other northern states followed suit. With the passage of New Jersey’s gradual emancipation act in 1804, the nation truly became “half slave, half free,” composed of two regional groupings with distinct legal systems pertaining to bound labor. To be sure, the regions continued to differ for other reasons as well. But the strategy suggested here is to try to isolate the effects of slavery as an institution by taking a close look at a small number of anomalous cases where what was apparently an ideal “free labor” crop flourished in areas that happened to be located in slave states. And conversely, to consider how history might have been different, in areas where the demand for slave labor was high, but slavery was prohibited by law.

Since this essay is in part a gesture of atonement towards agricultural history, I should acknowledge that I do not approach these issues untinged by prior leanings. It has long been my view that the literature on slavery overemphasizes issues pertaining to slavery as a *method of work organization* – such questions as effort levels, punishments, and work incentives – as contrasted with slavery as a *set of property rights*. Assessing slavery on the basis of the slave’s work effort is another longstanding tradition. Adam Smith argued that because a slave could not own property, he “can have

no other interest but to eat as much, and to labour as little as possible. Whatever work he does beyond what is sufficient to purchase his own maintenance, can be squeezed out of him by violence only...”¹⁰ In his scathing indictment of slavery and British capitalism – which actually had little to do with slavery as a system of production – Eric Williams wrote: “Slave Labor is given reluctantly; it is unskilful, it lacks versatility.”¹¹ Kenneth Stampf wrote that “slavery was above all a labor system,” in which “masters measured the success of their methods by the extent to which their interest in a maximum of work of good quality prevailed over the slaves’ predilection for a minimum of work of indifferent quality.”¹²

We now have a sufficient number of observations, however, to know that an extremely wide range of historical conditions were possible under the name “slavery.” That term does not define a single well-defined labor relationship, no more than “free labor” usefully describes the full range of nonslave labor relationships in the world. Some slave systems extracted work effort “by violence only,” but we now know that the detailed labor arrangements on New World plantations were extremely diverse, from centralized gangs to individual task systems approximating piecework.¹³ Labor relations had an evolutionary character under slavery just as under free-labor forms, and in both cases it is difficult to generalize about the outcomes. Ira Berlin reports that slaves in the Chesapeake worked longer and harder than indentured servants, but he then writes: “Over time, they perfected numerous techniques to foil their owners’ demands and expand control over their own labor and lives.”¹⁴

In contrast, the property rights of slave owners in North America were secure. Property rights includes such aspects of slavery as purchase and sale, accumulation and collateral. In farming operations, property rights in slaves meant that decisions about location, choice of crops, and family labor participation were largely driven by profitability calculations, as opposed to the complex combination of motives, loyalties, constraints and preferences that operate in a free society. David Galenson points out that one of the developments facilitating the transition from indentured servitude to slavery in the Chesapeake region was a clarification of property rights by the courts and legislature. Unlike servants, slaves did not have the right to sue their masters; and baptism of a mother did not change the legal status of her offspring.¹⁵ Jacob Price notes the role of the Colonial Debts Act of 1732 for development of the British slave colonies, because it gave effective legal (and therefore negotiable)

status to the bonds given by planters buying slaves on credit.¹⁶ As important as such variations in the law may have been, over most of the era of modern slavery certain distinguishing legal features were persistent. Slaves could be purchased and carried to any location where slavery was legal; they could be assigned to any task, and punished for disobedience; they could be accumulated as a form of wealth, and they could be sold or bequeathed. These are the enduring features that identify slavery in New World history. Although their implications played out very differently in different places, the main point for present purposes is that they are largely separable from slavery as a method of work organization, a topic about which few (if any) robust generalizations are possible.

To elaborate this framework fully would require a book rather than an article.¹⁷ Instead, the more narrowly bounded historical questions now under scrutiny offer a propitious setting within which to illustrate some broader propositions.

The Economic Geography of North American Slavery

What determined the geographic distribution of slaves in North America? If we compare county maps of farmland value and antebellum slave populations, a pattern emerges: Slaves were concentrated primarily in areas where farm land was most valuable. Clearly visible on Map 1 are the rich alluvial bottomlands of the Mississippi Valley, the stiff calcareous soils of the central Alabama-Mississippi “black belt,” and the base-rich limestone lands of the Nashville Basin. But these clusterings are equally evident on Map 2, which shows the geographic distribution of the slave population in 1860. The principle at work seems evident. The value of the marginal product of labor was higher where land was more valuable, so that landowners in these areas were able to outbid others (so to speak) for scarce slave labor.¹⁸

To be sure, the value of farm land reflects more than the intrinsic quality of the soil as measured by modern scientific surveys. Another relevant factor was climate, specifically the 200-210 frostless growing season and 20-25 inches of rainfall required for commercial cotton. Many areas of the southern piedmont were ultisols rather than alfisols, but the land was nonetheless valuable because it

was well-suited for cotton growing, and on this basis it supported a substantial slave population in 1860. Access to markets would be a third factor, adding further to the value of fertile riverine lands.

My conjecture is that the simple association between land value and slaves held true throughout the colonial era, though no attempt to establish this larger claim will be presented here. Over that extended horizon, there may be areas for which the causation was reversed; that is, where plantation land values were high only because of slavery. The rice lands of coastal South Carolina, for example, were extremely valuable, but their value would surely have fallen if the planters had had to recruit a voluntary labor force to perform such unappealing work in such an unwholesome, malarial location. The sugar-growing districts of Louisiana may have been similar. But for the broad expanse of North America, it seems evident that farmland potential came first, and provided the economic support for profitable uses of slave labor.

Of particular interest for present purposes are the three groupings of high-value counties near the top of the slave-state map, each of which also featured a significant concentration of slaves. Just south of the Ohio River is the bluegrass region of Kentucky, famous for its deep, calcareous and highly fertile soil. A pioneer wrote from the region to a friend in New Hampshire: “The fruit in this country is far more delicious than yours: I suppose the best country for corn, wheat, rye, oats, barley, flax, hemp and grass in the United States.”¹⁹ Tobacco was of some importance, but the primary staple whose profit potential supported the extension of slavery in the bluegrass was hemp. Hemp was valued as a naval store by the British Empire, but its nineteenth century expansion was closely linked to the cotton economy, where it served as bale rope and bagging. Its soil requirements are highly demanding – deep, loamy warm soil, with appreciable amounts of humus – but these were satisfied in the bluegrass area, where hemp provided the cash-crop base around which a prosperous and diversified farming area emerged.

To the west one’s eye falls upon the stretch of high-value farmland along the Missouri River. This district was called “Little Dixie,” and was known from the earliest settlements as “no doubt the richest considerable body of good land in the territory.” Such phrases as “farmer’s paradise” and “Canaan of America” abound in contemporary sources.²⁰ One should not of course accept the word of

self-interested publicists, but R. Douglas Hurt's study makes it clear that Little Dixie was prosperous and affluent, and that its slaveowners were the wealthiest in the area. Slave farms grew a diverse mixture of crops, including tobacco, corn, oats, hemp, and perhaps surprisingly, commercial wheat, which expanded robustly in the 1840s and 1850s.²¹

The conjunction of slavery and wheat would not surprise anyone familiar with the Valley of Virginia, the largest and easternmost of the three border-state clusters of high-value farmland and slave population. Its superior limestone soils were considered ideal for growing wheat, easily the leading cash crop of the Valley. This district was, after all, the home of Cyrus McCormick, inventor of the reaper, whose father operated a slave-using wheat farm in Rockbridge County. Slavery was by no means incompatible with the Valley's mixed farming menu of wheat, corn, oats, hay and diverse livestock.²² Indeed, in a microeconomic study focused on the Virginia Piedmont area just to the east (but within the cluster on Maps 1 and 2), James Irwin reports that slavery and wheat were intimately linked within the area. Large slaveholding units (those with twenty or more slaves) were found to be significantly more specialized in wheat production than were smaller farms nearby, wheat evidently occupying a local cash crop "niche" similar to that of cotton across the larger expanse of the South.²³ I return for a closer look at Irwin's remarkable study below.

The important point here is that where "natural" economic conditions were favorable, slavery as an institutional and organizational form was fully compatible with a wide range of farm products and work routines. Compatibility means not just bare survival, but growth. In every one of three cases considered, both production and the slave population grew during the 1850s, despite the fact that slaveowners had ready access to the booming slave markets of the lower South. And this prosperity prevailed, even when the centers of slavery were surrounded by farming regions elsewhere that employed few if any slaves, and even when the slave-based district bordered on states in which slavery was illegal. My conclusion is that it is a serious error to conflate slavery as an institution with narrowly specified geographic conditions associated with the South.

Slavery in the Northwest Territory?

The evidence on slavery's broad geographic range prompts the more challenging question of whether the institution might actually have extended its reach north of the Ohio River, had it not been prohibited in that region by the Northwest Ordinance of 1787. The question is challenging because it raises the specter of counterfactual history, and because taking it seriously means confronting the overwhelming presumption among historians that slavery did not "take root" in the northern colonies because it was "not well suited" to northern conditions. Such perceptions are powerfully colored by the abolitions in northern states, effected through legislative and judicial channels in the wake of the American Revolution. Earlier in the eighteenth century, slave labor was used successfully in such high-fertility areas as the Narragansett Bay in southern New England, the Connecticut and Hudson River Valleys, Long Island, and the grain-producing regions of eastern Pennsylvania and northern New Jersey. Between 1725 and 1750, according to Ira Berlin: "Slaves became the single most important source of labor in the North's most fertile areas and its busiest ports...Slaves [in these areas] were no longer an adjunct to an agricultural economy based on family labor or white servitude but were the largest element in the rural labor force."²⁴ In none of these localities did slavery die a natural death, and indeed owners often managed to retain claims on their labor long after the principle of emancipation had been enacted. Slavery had no future in these areas, but the reason for this was political, not a matter of geographic or economic incompatibility.

Because slavery was politically curtailed in the northern states and territories, we cannot observe the adaptations the institution might have undergone if it had been allowed free rein. What we can do instead is to examine the perceptions of slavery as reflected in several crucial debates at the time of statehood and shortly thereafter. A good place to begin is Kentucky.

Because Kentucky was retained by Virginia when other western land claims were ceded, the area was unaffected by the Northwest Ordinance, and slaveholders were able to enter freely. Nonetheless, despite the favorable prospects for slave-based agriculture in the bluegrass region, it was by no means obvious at the 1792 statehood convention that slavery was a logical choice for the state as a whole. The 1790 census identified only 1855 slaveholders in Kentucky (in a total free population of

61,000), whose average holding was just 6.7 slaves.²⁵ Large parts of Kentucky had virtually no slaves. Because Kentucky farm lands were the objects of a jumble of conflicting ownership claims in the 1790s – making it a “paradise for lawyers” as much as for farmers – many settlers feared that slavery threatened prospects for broad-based land acquisition, by facilitating the aggrandizement of large holdings.

Despite these bases for opposition, Kentucky slaveowners were far better represented and better focused on their goals than were their opponents at the 1792 convention. Ninety per cent of the delegates owned slaves, two-thirds of them holding five or more. Slavery was the only convention issue contentious enough to require a roll-call vote, on which the antislavery amendment was defeated by 26-16. (The leaders of the antislavery faction were a group of seven ministers, but the only lasting effect of their effort was a constitutional prohibition on ministers serving in the state legislature. A similar move to exclude lawyers narrowly failed.) Opposition to slavery played a role in the ongoing demand for a new constitutional convention. But when that campaign finally succeeded in 1799, the convention actually strengthened the legal status of slavery, denying the legislature authority to prohibit importation of slaves into the state. In subsequent decades, even though most public discussion proceeded from the presumption that slavery was economically harmful, abolition became politically unthinkable both as a violation of the rights of owners and because of the perceived need to control the black race. Thus, Kentucky illustrates a case in which an early “beachhead” effectively perpetuated slavery, even in a state that might have been considered not naturally suited for slave-based agriculture.²⁶

North of the Ohio, slavery never achieved this status. But the difference did not result from incompatibility between slavery and northern crops; nor was it even attributable to differences in public opinion regarding slavery, at least at the beginning. Between 1787 and 1807, residents of the Ohio territory inundated Congress with petitions urging repeal of Article VI of the Ordinance, which prohibited slavery. Although these petitions were ignored, no steps were taken to free any slaves under the provisions of Article VI, and indeed new slaves were brought into the territory during this period. After Ohio statehood in 1803, the majority position in the Indiana territory was clearly pro-slavery, led by Territorial governor William Henry Harrison, himself a wealthy slaveholder from Virginia. Only

when it became clear that Congress would not repeal Article VI did the Indiana territorial legislature resort to a system of indentured servitude that amounted to a *de facto* slave code. Numerous auctions and advertisements testify to the reality of slavery in the region. Only the threat of Congressional veto induced Indiana to enter the union as a free state in 1816, though extra-legal defenses of slave property continued at least until the celebrated state supreme court decisions of 1820 and 1821.²⁷

The slavery debates in the Northwest Territories were not about crops and methods of work organization. Elements of regional culture-clash were certainly present, as the early migration stream across the river from the South was gradually overtaken by the westward influx of settlers from the free states. But the heart of the issue was economics, specifically property rights and land values. Pro-slavery forces argued that rapid settlement and commercial development in remote frontier areas could occur only through the use of slave labor. This proposition was advanced not just by self-interested slave owners, but also by land owners who believed that the growth of land values would be diminished by effectively prohibiting entry of “valuable immigrants” from the South.²⁸ Nowhere was this argument advanced more forcefully than in the pitched slavery debate that took place in Illinois in the mid-1820s. Pro-slavery advocates portrayed their adversaries as throwing money away for the sake of ideology: “Look at those trains of wagons with their splendid teams, their carriages and their gangs of negroes. They are going over to fill up Missouri, and make it rich, while our State will stand still or dwindle, because you wont let them keep their slaves here.”²⁹

Illinois is perhaps the most plausible example of a northern state that might have tipped the other way towards slavery, had political contingencies played out differently. There were perhaps 1000 slaves in Illinois at the time of statehood in 1818, enough to prompt an English settler to write that it was “as much a slave-state as any of the states south of the Ohio River.”³⁰ If high-value farm land was an attractor of slavery, the river bottom lands in the southern part of the state filled the description perfectly. With corn yields reported as high as 100 to 120 bushels per acre, these lands were said to be “the most fertile of any in the Union.” One 1817 visitor compared the area favorably to the bluegrass region: “Indian corn, wheat, rye, oats, tobacco and hemp are raised with as much facility and ease as in the neighborhoods of Lexington [Kentucky] where I was raised...A more congenial soil for

general cultivation I believe no where exists, it may be called the Elysium of America.”³¹

Illinois entered the union in 1818 as a free state for the same reason as Indiana: It was well understood that Congress, concerned about maintaining balance between free and slave states, would not approve a state constitution any other way. Therefore, although the true sentiments at the constitutional convention favored slavery, the leadership managed to persuade the majority that once statehood was achieved, the new legislature would then be free to reenact the old territorial “black codes.” Thus, as in Kentucky (but in the reverse direction), approval of statehood did not end the slavery debate within Illinois. The call for a new constitutional convention originated with pro-slavery forces, and the subsequent debate amounted to a referendum on the introduction of slavery. We can only conjecture as to the ultimate implications of such a vote, had the convention been held and had it followed through on its mandate. In August, 1824, the call for a new convention was defeated by a vote of 6,640 to 4,952. Although slavery was not legally abolished in Illinois until 1845, the anti-convention vote of 1824 ended the discussion and settled the issue as a practical matter. But if the pro-slavery forces had prevailed for a time sufficient to establish an economic as well as a political beachhead, slavery might have shown as much persistence in Illinois as it did in Kentucky.³²

What tipped the political balance in Illinois was partly a matter of regional demographics, as northern migrants less sympathetic to slavery began to outnumber the southerners. But behind the political arithmetic lay a deeper difference between free and slave states in patterns of settlement and in their implications for property values. At the time of the Constitutional Convention of 1787, it was widely assumed that settlement and population growth would be most rapid in the southern states, where cash crops promised quick financial returns. As early as 1815, however, observers began to note that just the opposite was occurring, as free state population growth quickly surpassed previous expectations. It did not take long for the difference to become strongly associated with the choice of labor systems, enough to induce wealthy southerners to speculate in lands north of the Ohio River, on the grounds that these were a better investment than lands to the south.³³ This perception may have been decisive in the Illinois debate, where such comparisons were often cited. For example, Rev. Thomas Lippincott, corresponding secretary for the “Madison Association to oppose the introduction

of Slavery in Illinois,” pointed out that both population and land values increased more rapidly in Pennsylvania than in Virginia, concluding that “the existence of slavery in one, and its non-existence in the other state, has caused the discrepancy.”³⁴

Thus the primordial positive association between slavery and farmland values reversed itself in the nineteenth century, when comparisons are made across free and slave states. But the rapid growth of land values in the free states was the *result* of economic development – not just population growth, but land clearing, towns, schools, investments in transportation and other forms of market structure. With the aid of hindsight, we may view the northern abolition of slavery as an institutional innovation that channeled developmental energies into these new paths. But these associations were not so clearly seen during the formative phase when the geographical boundaries of slavery were established, roughly from the 1780s to the 1820s. Many of those critical decisions were close calls that might have come out differently. If they had, the implications would have been significant, both for the course of American history, and for our thinking about the character of slave-based agriculture.

Slavery and Wheat

Counterfactual history has its limits, and these limits are stretched beyond reasonable bounds if we try to contemplate an alternative American agricultural history in which slavery had no geographic limits. We may learn more by returning to earth and taking a closer look at the linkages between slavery and wheat-farming in real historical cases. Such cases are more numerous than we imagine. Wheat along with other small grains was commonly cultivated by slave labor in the eighteenth century Chesapeake, first as a complement to tobacco, and later in many areas as a cash-crop alternative. To be sure, the shift to wheat was associated with changes in work routines for slaves, towards more diversified activities and skills, and an increased frequency of slave-hiring. These adjustments ameliorated the problem posed by peak-labor seasonality in wheat harvesting, but they did not seem to threaten the institution of slavery itself.³⁵ In the nineteenth century, wheat was an important cash-crop component on mixed-product slave farms in Kentucky and Missouri.³⁶ But it was in antebellum

Virginia that wheat and slavery demonstrated their closest mutual affinity.

Drawing on samples collected by James Irwin from the manuscript census, we can illustrate the association between slavery and wheat on the Virginia Piedmont in 1850 and 1860.³⁷ In Figures 1A and 1B, the dark bars show that the share of wheat in total farm output was sharply higher on farms with eleven slaves or more than on smaller or slaveless farms.³⁸ If anything, the divergence between large and small operations increased during the 1850s, since wheat amounted to barely 10 percent of total farm output on slaveless farms in 1860. For contrast, the cross-hatched bars display the share of tobacco in total farm output on the same farms. The tobacco share was actually highest on the slaveless farms, constituting nearly 50 percent of their output in 1860. This evidence confirms the absence of a distinct production-based association between tobacco and slavery. Since tobacco is the very prototype of a “care-intensive” crop, a last bastion of the small family farm long after the demise of slavery, this news is hardly surprising. But it intensifies the puzzle of explaining the apparent affinity between wheat and slavery on the Virginia Piedmont.

Perhaps it is appropriate to begin with the feature of wheat farming most often thought to be unsuited to slave labor, the strong seasonality of labor requirements. The saying “wheat farms and hobos go together” became a byword in the late nineteenth century, when large-scale commercial wheat cultivation spread in the plains and prairie states, suggesting that matching workers to wheat acreage posed a problem under any system.³⁹ But surely it would be inefficient (so the argument goes) to solve the peak-labor problem by buying and holding a stock of slave laborers for an entire year, just to be assured of covering the labor requirements of a single month. Documentary evidence from the Lower Shenandoah Valley, however, decisively refutes the contention that slaves on wheat farms were underemployed for significant portions of the agricultural year.

According to detailed work diaries surveyed by Kenneth W. Keller, “slaves were employed at all seasons of the year in a variety of arduous tasks”:

Slaves’ work included laying off new fields; removing stones from the fields and hauling them away; cutting trees and hauling wood to town, to the railroad depot, or to sawmills; harrowing; scraping manure from barnyards; hauling, plowing and spreading gypsum and manure; sowing;

constructing and maintaining log and stone fences to keep cattle out of the fields; harvesting and threshing wheat; cleaning, sowing and hulling clover that was used to replenish nitrogen in the wheat fields; stacking wheat; repairing wheat stacks; cleaning and screening wheat; hauling wheat to the mill; hauling wheat straw, fodder and chaff; burning straw and chaff; preparing seed wheat; cutting clover grown in the wheat fields after harvest; and foddering the cattle. Once these chores were done, slaves did not rest. There was coal to haul; ice to cut and load; beef and mutton to salt; and corn to plant, thin or shell. Other slave tasks included bringing loads of gypsum or buckwheat; shucking corn; pounding hominy; planting and tending gardens; digging out hotbeds; planting and digging potatoes; patching bags; making shingles; making butter and cheese; burying cabbage or beets; repairing cisterns; sheering sheep; tending livestock; greasing and oiling harnesses; working on roads; making currant wine; mowing; cutting oats; and working on neighboring wheat farms, if one's master lent or hired out his labor force to a neighbor.⁴⁰

To acknowledge the obvious: Much of the diversity of tasks on this list reflected the “mixed” character of farm production in Virginia, including both the variety of cash products and the mix of between market and non-market activities. Further, the heterogeneity of the tasks undoubtedly raised problems of supervision and work incentives, which may have set limits on the feasible scale of farming operations. But although magnitudes varied, the principles at work did not differ fundamentally from those in the cotton belt, where farms also strived for maximum self-sufficiency and found numerous ways to fill out the work year productively.⁴¹ The important point here is that these adjustments were indeed possible under slavery, even in a farming area whose geography, soils, and crops contrasted so strongly with those of the Deep South. Slavery was firmly entrenched in the antebellum Virginia wheat economy on the eve of the Civil War.

This discussion explains why slavery and wheat were not *incompatible* partners; but how then should we understand the positive affinity between the two within the region, as shown in Figures 1A and 1B? In careful econometric work, Irwin rejects the hypothesis that the answer lay primarily in scale-dependent “trade-offs” between wheat and other crops, i.e., a shift of inputs amounting to a

movement along a farm-level transformation curve. Wheat planting clearly had an opportunity cost in land use, in that the same acres could not also be planted in tobacco or other crops; but Irwin finds that other input requirements “dovetailed” well with those for wheat, so that its affinity with slavery was not primarily a matter of sacrificing other outputs.⁴² Citing descriptions of finely-tuned “teams” of slaves operating during the harvest, Irwin inclines towards the view that the explanation lies in the superior efficiency of large-scale operations, emphasizing the pace and effectiveness of harvest labor.⁴³

There are a number of reasons to look beyond an answer couched solely in terms of generalized productive efficiency. Scale effects in wheat production *per se* are not clearly supported by the data, and Irwin is careful to note that other interpretations are possible.⁴⁴ Total factor productivity calculations are highly sensitive, not just to the weighting of various components of output (including both market and non-market production), but also to the weights assigned to different members of the labor force, men, women and children across the full range of ages. This last consideration is of particular concern where slave labor was involved, because deployment of women and children into field work was one of the main features that differentiated slavery from free family farming. Considering the entire farming enterprise as a package of heterogeneous inputs and outputs (as suggested by the list of tasks quoted above), we may question whether labor performance in one specific phase in the production of one particular crop does justice to the larger picture.

Where else can we turn? A first step in an alternative interpretation is suggested by returning to the concept of an affinity between slavery and high-valued farmland. Figures 2A and 2B display the average values of improved acreage on the four classes of slaveholding farms.⁴⁵ It is evident that the positive association seen in Maps 1 and 2 also prevailed on a cross-section basis within the Virginia Piedmont. The differences were not small: in 1850 the value per improved acre on the largest slaveholding units was more than double the value on slaveless farms, and by 1860 the ratio had climbed to 2.5. If the differences in value reflected differences in crop yields, we can understand the difficulties that small and slaveless farms faced in cultivating wheat as a cash crop. Their expected yields per acre may not have been high enough to justify the expense and risk entailed in planting an extensive acreage in wheat.

Our task is not complete, of course, because presumably these high-value wheat lands were not simply allotted arbitrarily to large slaveowners on the basis of their wealth. We still must explain how slaveowners were able (so to speak) to outbid their smaller and slaveless counterparts for the best available farm land in the district. An interpretation rooted in property rights, however, is implicit in the foregoing discussion: As suggested by Hanes' hypothesis linking slavery and turnover costs, slaveowning farmers could accept the risks of extensive wheat planting, because they possessed a captive labor force that they knew would be available for the peak demands at the time of the harvest. And, they could extend this risk-taking that much further, because social norms concerning women and children did not constrain their assignments of tasks to slaves. As one ex-slave recalled:

John Fallons had 'bout 150 servants and he wasn't much on no special house servants. Put everybody in de field, he did, even de women. Growed mostly wheat on de plantation, an' de men would scythe and cradle while de women folk would rake and bind. Den us little chillun, boys an' girls, would come along an' stack.⁴⁶

The contrast between this description and the harvest problem in the free states could hardly be more sharp. Not only was harvest labor (and field work generally) reserved for men as a matter of American social convention, but landowners were more concerned with the brute problem of recruiting and retaining hired labor of any kind than with the detailed specification of tasks on harvest teams. Thus, on his trips to the Ohio Valley, Cyrus McCormick wrote home to Virginia of crops wasting for lack of labor to harvest them.⁴⁷

If property rights in slaves facilitated commercialization in the form of wheat, the mention of McCormick's name calls attention to one of the long-term implications of the contrast in labor systems. Under slave-based mixed farming, labor requirements dovetailed across tasks to fill out the work year. But in the states where profit opportunities in wheat were favorable but slavery was prohibited, powerful pressures built to solve the peak labor problem through mechanization. These incentives were well understood by McCormick, who largely abandoned the Virginia market after 1845, moving his reaper business permanently to Chicago, where it prospered in the wheat boom of the 1850s.⁴⁸ Using the language of economics, the mere *invention* of the reaper would have been of relatively small economic consequence unless coupled with the purposeful *development* and *diffusion* of the invention.

Together, these processes constitute economic *innovation*, one of the driving forces behind long-term productivity growth. But these processes mainly ensued in the northern states.⁴⁹

In support of this interpretation, consider the cross-section pattern of Farm Implements per Worker in the Virginia Piedmont, as shown in Figure 3. In 1850, farm implements per workers were distinctly lower on farms with slaves than on farms without slaves. By 1860 the downward slope was diminished, as farms of all sizes increased their use of implements, and the ratios were roughly constant across classes. In conjunction with Figures 1A and 1B, the evidence in Figure 3 firmly rejects the possibility that the affinity between wheat and slavery was driven by greater mechanization on large slave-using farms. Contrast this pattern with Table 1, drawn from the Bateman-Foust sample from the 1860 manuscript census, which shows a strong positive relationship between farm size and the value of implements per worker in the northern states.⁵⁰

In the free states, mechanization allowed family farmers to avoid the risks and hassles of dealing with unreliable non-family labor, and thus enabled them to expand the scale of their farming operations in a sustainable manner. Property rights in machines thus provided an alternative to property rights in labor. The adaptation of slavery to wheat farming, therefore, carried the implication that Virginia agriculture was largely isolated from what became the mainstream of technological progress and productivity growth in American agriculture. One local historian, writing in 1955, recognized this inverse relationship by speculating: “Perhaps the supply of slave labor, which included experienced and expert cradlers, explains the absence of the machine even on the best farms. The art of cutting wheat with a cradle was known to older men remembered by this generation, and it was not an uncommon sight, as late as thirty to thirty-five years ago to see fields of wheat harvested with cradles, although binders had come into general use then, and custom harvesting was the prevailing practice, as it had been since the latter part of the nineteenth century. In addition to men skilled in the use of cradles, there were men and women who were also skilled in tying the bunches of grain cut and dropped by the cradler and who followed him as he made his rounds.”⁵¹

Conclusion

The main point of this essay is that the economic history of American agriculture might have been very different from the one we have known, and that the “invention of free labor” at the turn of the nineteenth century was a decisive step in shaping that history. It should hardly need saying that in stressing the geographic adaptability of slavery, it is not my intention to idealize that institution, still less to sugarcoat its human reality. Slavery looms large in America’s history of regional backwardness and racial disadvantage, and nothing written here holds to the contrary. But the decision to abolish slavery was fundamentally political, not the inevitable consequence of profit calculations or an inherent logic of economic evolution.

Notes

1. William N. Parker, “The Magic of Property,” *Agricultural History* 54 (October 1980), 478.
2. Douglas Helms, “Soil and Southern History,” *Agricultural History* 74 (Fall 2000), esp. Figure 1 on p. 734.
3. Julius Rubin, “The Limits of Agricultural Progress in the Nineteenth-Century South,” *Agricultural History* 49 (1975): 362-373.
4. Douglass North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton, 1966; first published 1961), 122.
5. Carville Earle, “Why Tobacco Stunted the Growth of Towns and Wheat Built Them into Small Cities,” and “To Enslave or not to Enslave: Crop Seasonality, Labor Choice, and the Urgency of the Civil War,” both in *Geographical Inquiry and American Historical Problems* Stanford, CA: Stanford University Press, 1992: 88-152, 226-257.

6. Stefano Fenoaltea, "Slavery and Supervision in Comparative Perspective: A Model," *Journal of Economic History* 44 (September 1984): 635-668.
7. Claudia Goldin and Kenneth Sokoloff, "The Relative Productivity Hypothesis of Industrialization," *Quarterly Journal of Economics* (August 1984), 473.
8. Robert Fogel, *Without Consent or Contract* (New York: W.W. Norton, 1989), 26, 34, 78, 162.
9. Christopher Hanes, "Turnover Cost and the Distribution of Slave Labor in Anglo-America," *Journal of Economic History* 56 (June 1996): 307-329.
10. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Oxford: Clarendon Press, 1976; first published 1776): 411-412.
11. Eric Williams, *Capitalism and Slavery* (Chapel Hill: University of North Carolina Press, 1944): 6.
12. Kenneth Stampp, *The Peculiar Institution* (New York: Vintage Books, 1956): 34, 54.
13. Philip D. Morgan, "Task and Gang Systems: The Organization of Labor on New World Plantations," in Stephen Innes (ed.), *Work and Labor in Early America* (Chapel Hill: University of North Carolina Press, 1988); Peter Coclanis, "How the Lowcountry Was Taken to Task," in Robert Louis Paquette and Louis A. Ferleger (eds.), *Slavery, Secession, and Southern History* (Charlottesville: University Press of Virginia, 2000).
14. Ira Berlin, *Many Thousands Gone: The First Two Centuries of Slavery in North America* (Cambridge, MA: The Belknap Press of Harvard University Press, 1998): 117, 119. The literature on the "informal slave economy" and "collective labor bargaining" under slavery is growing. See Ira Berlin and Philip D. Morgan (eds.), *The Slaves' Economy, Independent Production by Slaves in the Americas* (London: Frank Cass, 1991); Betty Wood, *Women's Work, Men's Work: The Informal Slave Economies of Lowcountry Georgia* (Athens, GA: University of Georgia Press, 1995).
15. David Galenson, "The Settlement and Growth of the Colonies," in Stanley L. Engerman and Robert E. Gallman (eds.), *The Cambridge Economic History of the United States: Volume I, The Colonial Era* (New York: Cambridge University Press, 1996).
16. Jacob M. Price, "Credit in the Slave Trade and Plantation Economies," in Barbara Solow (ed.), *Slavery and the Rise of the Atlantic System* (New York: Cambridge University Press, 1991).
17. A longer manuscript entitled *Slavery and American Economic Development* is now in preparation, building on the Fleming Lectures delivered at Louisiana State University in 1997.
18. This analysis does not address the question posed by Hanes (p. 324) which is why these areas offered "a return to employment [of slaves] that overcame the transactions costs of employing labor

from outside the family.” In most of the high-value areas, slave-using farms co-existed with family farms without slaves. When successful family farms chose to expand, they did so by purchasing slaves. Evidently, therefore, neither form had a clear competitive advantage.

19. Quoted in James F. Hopkins, *A History of the Hemp Industry in Kentucky* (Lexington: University of Kentucky Press, 1950), 14.

20. Douglas Hurt, *Agriculture and Slavery in Missouri's Little Dixie* (Columbia: University of Missouri Press 1992), 5, 51, 68.

21. Hurt, *Missouri's Little Dixie*, 68-69. Slavery was firmly entrenched in Missouri, because of disproportionate political power exercised by slave owners from Little Dixie. Leaders of the ruling Democratic Party, a group known as the “Boonslick Democracy” or the “Central Clique,” were all Missouri valley slave owners. T. J. Stiles, *Jesse James: Last Rebel of the Civil War* (New York: Alfred A. Knopf, 2002): 38.

22. The success of the Valley farm economy, and the integral place of slavery within it, is confirmed in several studies collected in Kenneth E. Koons and Warren E. Hofstra (eds.), *After the Backcountry: Rural Life in the Great Valley of Virginia, 1800-1900* (Knoxville: University of Tennessee Press, 2000).

23. James Irwin, “Exploring the Affinity of Wheat and Slavery in the Virginia Piedmont,” *Explorations in Economic History* 25 (1988): 295-322.

24. Berlin, *Many Thousands Gone*: 179, 181. See also the citations in Hanes, “Turnover Cost,” 307.

25. United States Bureau of the Census, *Negro Population in the United States, 1790-1915* (Washington: Government Printing Office), 56 (Table 5) and 57 (Table 6).

26. The preceding paragraphs draw upon Ivan E. McDougale, *Slavery in Kentucky, 1792-1865* (Lancaster, PA: New Era Printing Company, 1918); Lowell H. Harrison, *Kentucky's Road to Statehood* (Lexington: The University Press of Kentucky, 1992), 2-11, 103-119; Stephen Aron, *How the West Was Lost: The Transformation of Kentucky from Daniel Boone to Henry Clay* (Baltimore: The Johns Hopkins University Press, 1996), 89-95; Harold D. Tallant, *Evil Necessity: Slavery and Political Culture in Antebellum Kentucky* (Lexington: The University Press of Kentucky, 2003), 7-9, 107.

27. Emma Lou Thornbrough, *The Negro in Indiana Before 1900* (Bloomington, IN: Indiana University Press 1985; first published 1957), 6-8, 26-28; Morton M. Rosenberg and Dennis V. McClurg, *The Politics of Pro-Slavery Sentiment in Indiana, 1816-1861* (Muncie, IN: Ball State Monograph Number Twelve, 1968); Paul Finkelman, “Evading the Ordinance: The Persistence of Bondage in Indiana and Illinois,” *Journal of the Early Republic* 9 (1989), 35-40.

28. Quoted (from a letter from George Nicholas to James Madison, May 2, 1792) in Harrison, *Kentucky's Road to Statehood*, 125.
29. Quoted in Suzanne Cooper Guasco, "The Deadly Influence of Negro Capitalists': Southern Yeomen and Resistance to the Expansion of Slavery in Illinois," *Civil War History* 47 (2001), 21.
30. Quoted in Guasco, "The Deadly Influence," 16.
31. James Simeone, *Democracy and Slavery in Frontier Illinois: The Bottomland Republic* (DeKalb, IL: Northern Illinois University Press, 2000), 42, 44, 46. Simeone's maps of early settlement patterns and soil types (43) are particularly informative.
32. Accounts of the Illinois convention debate may be found in Simeone, *Democracy and Slavery*; Guasco, "The Deadly Influence;" and N. Dwight Harris, *The History of Negro Servitude in Illinois* (Chicago: A.C. McClurg, 1904).
33. Kim M. Gruenwald, *River of Enterprise: The Commercial Origins of Regional Identity in the Ohio Valley, 1790-1850* (Bloomington, IN: Indiana University Press, 2002), 83-84. Gruenwald quotes Richard Clough Anderson of Lexington, Kentucky: "Money judiciously laid out in the purchase of land in the Indiana (new purchase) would be very prudent and safe. The land in that country populated by poor persons (divided into small tracks) & worked by freemen instead of slaves, will be highly cultivated & become more valuable than any Country s settled by Virginians held in large parcels & cultivated by Slaves." The changing tenor of North-South comparisons is traced (as seen by Virginians) by Joan Cashin, "Landscape and Memory in Antebellum Virginia," *Virginia Magazine of History and Biography* 102 (1994), 486-487.
34. Quoted In Guasco, "The Deadly Influence," 23.
35. Berlin, *Many Thousands Gone*, 135-136; Charles J. Farmer, *In the Absence of Towns* (Lanham, MD: Rowan and Littlefield, 1993), 85-87.
36. Gruenwald, *River of Enterprise*, 49; Hurt, *Agriculture and Slavery*, 68-69.
37. I am grateful to James Irwin for sharing his data with me. For details on the sampling procedures, see Irwin, *Slave Agriculture and Staple Crops in the Virginia Piedmont*, unpublished Ph.D. thesis, The University of Rochester, 1986.
38. Following Irwin, "total output" is defined as the sum of crop production at market value, plus estimates of the net value of mutton, beef and pork derived from census figures on sheep, cattle, and swine.
39. Paul Taylor, *Labor on the Land* (New York: Arno Press, 1981), 62. Diagrams of monthly labor requirements published in the Yearbook of the Department of Agriculture for 1917 bring out the

striking contrasts between crops. Three of the diagrams are reproduced in Gavin Wright, "American Agriculture and the Labor Market: What Happened to Proletarianization?" *Agricultural History* 62 (1988), 199-200.

40. Kenneth W. Keller, "The Wheat Trade on the Upper Potomac, 1800-1860," in Koons and Hofstra (eds.), *After the Backcountry*, 27. Wheat planters in Tidewater Virginia also made effective year-round use of their slaves. Drawing upon the journal of slave owner John Walker, Claudia Bushman writes: "While historians have considered slave labor inefficient for grains, Walker kept his hands busy throughout the year...Through all seasons of the year, Walker drove his slaves with a long agenda of work." *In Old Virginia: Slavery, Farming and Society in the Journal of John Walker* (Baltimore: The Johns Hopkins University Press, 2002): 34, 36.

41. The classic statement of this principle is Ralph V. Anderson and Robert E. Gallman, "Slaves as Fixed Capital," *Journal of American History* 64 (1977), 24-46.

42. Irwin, "Exploring the Affinity," 304-315.

43. *Ibid.*, 302. The most compelling description of something approaching a "team system" in the wheat harvest is found in Lewis Cecil Gray, *History of Agriculture in the Southern United States to 1860* (Washington: Carnegie Institution of Washington, 1933), 555-556, quoting a Virginia planter writing in 1852.

44. *Ibid.*, 314-315.

45. The values shown are the coefficients of Improved Acreage from regressions of Value of Farm on Improved and Unimproved Acres. To avoid upward bias, the regressions were run without a constant term (i.e., they were constrained to go through the origin). When a constant term is included, both the constant and the coefficient on Unimproved Acreage show erratic variations between size classes. In all specifications, however, the pattern of coefficients on Improved Acreage is consistent with that displayed in Figures 2A and 2B.

46. Charles L. Perdue, Jr., Thomas E. Barden, and Robert K. Phillips (eds.), *Weevils in the Wheat: Interviews with Virginia Ex-Slaves* (Charlottesville: University Press of Virginia, 1976), 26.

47. William T. Hutchinson, *Cyrus Hall McCormick: Seed-Time, 1809-1856* (New York: The Century Co., 1930), 208-209. On problems of recruiting hired labor in the free states, see the numerous citations in Heywood Fleisig, "Slavery, the Supply of Agricultural Labor, and the Industrialization of the South," *Journal of Economic History* 36 (September 1976), 573-574.

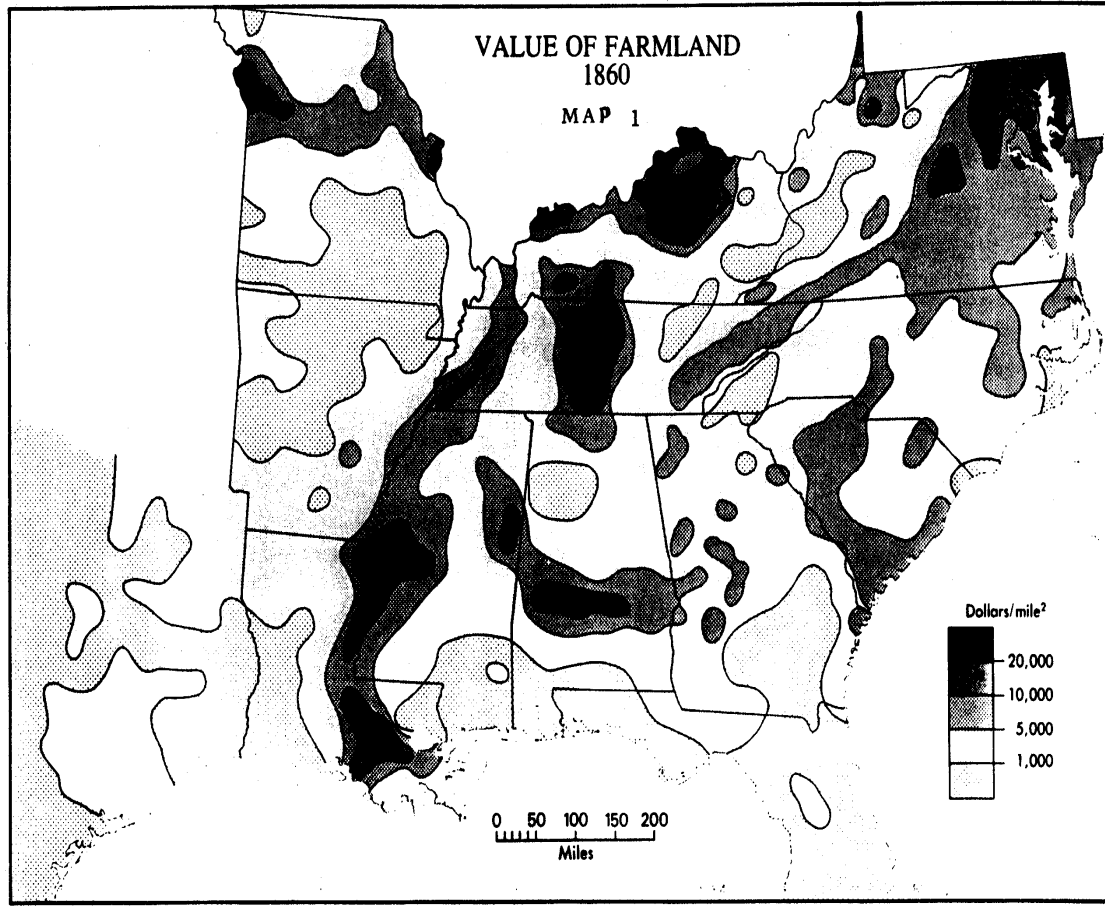
48. *Ibid.*, 201.

49. The debate over the diffusion of the reaper in the midwest is one of the oldest in cliometrics, originating with Paul David, "The Mechanization of Reaping in the Ante-Bellum Midwest," in *Technical*

Choice, Innovation and Economic Growth (Cambridge, UK: Cambridge University Press, 1975; first published 1966), and continuing through Alan Olmstead and Paul Rhode, “Beyond the Threshold: An Analysis of the Characteristics and Behavior of Early Reaper Adopters,” *Journal of Economic History* 55 (March 1995). The interpretation presented here does not depend upon the details of this debate about mechanisms of diffusion. The important point is that mechanization occurred in the midwest, not the south.

50. The table was first presented in Gavin Wright, *The Political Economy of the Cotton South* (New York: W.W. Norton, 1978), 54. In the preface to the book, I thanked Jeremy Atack for his assistance in developing the table. I am pleased to thank him again for mentioning this correspondence in his gracious introduction at the Agricultural History meetings in Memphis, in which he noted that the materials were still sitting on his desk unfiled. It is sheer coincidence that the same table proved useful in the present context, some twenty-five years after it was constructed with Jeremy’s help.

51. Herbert Clarence Bradshaw, *History of Prince Edward County, Virginia* (Richmond, VA: The Dietz Press, Incorporated, 1955), 342.



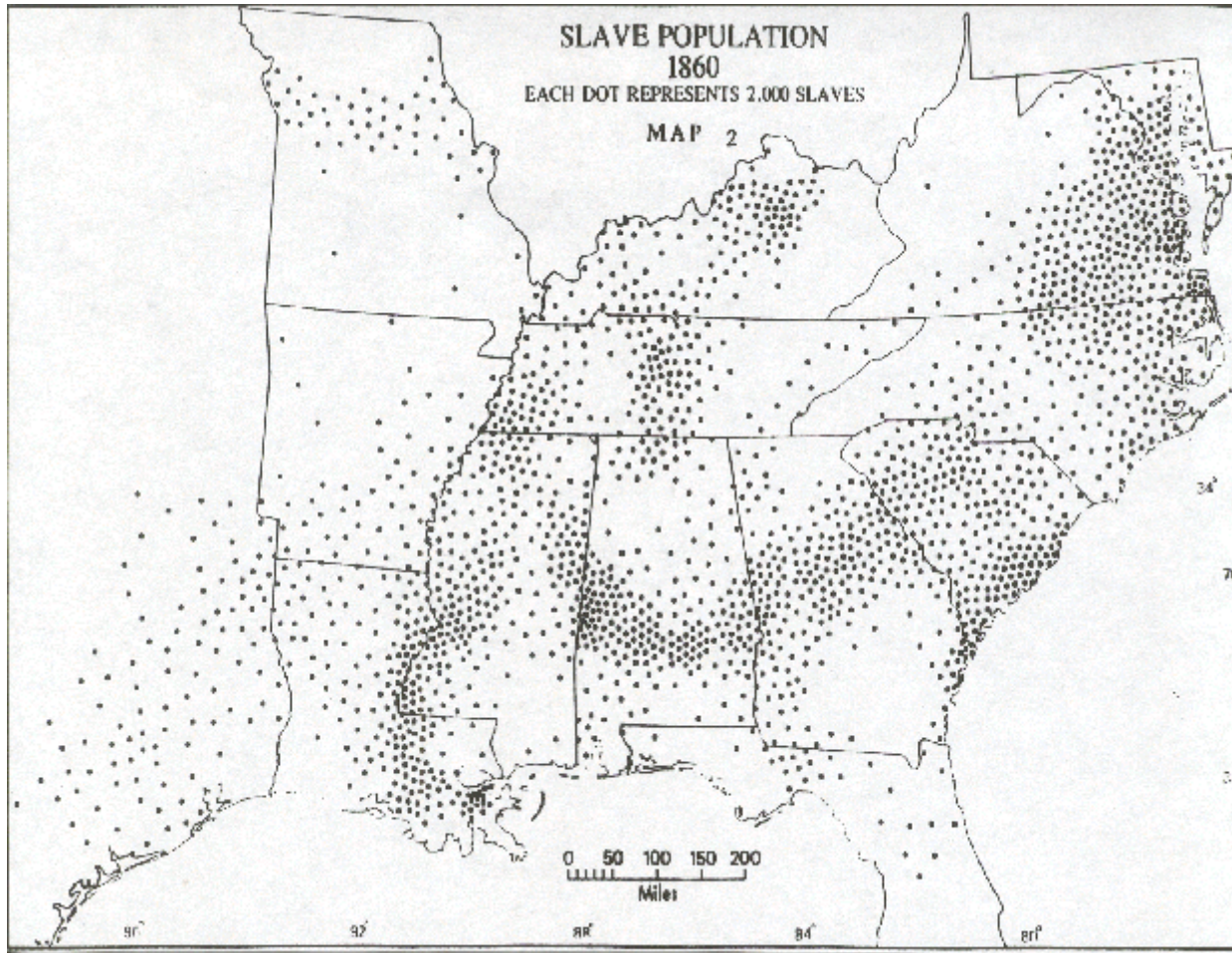


Figure 1A. Shares in Total Farm Output

Virginia Piedmont 1850

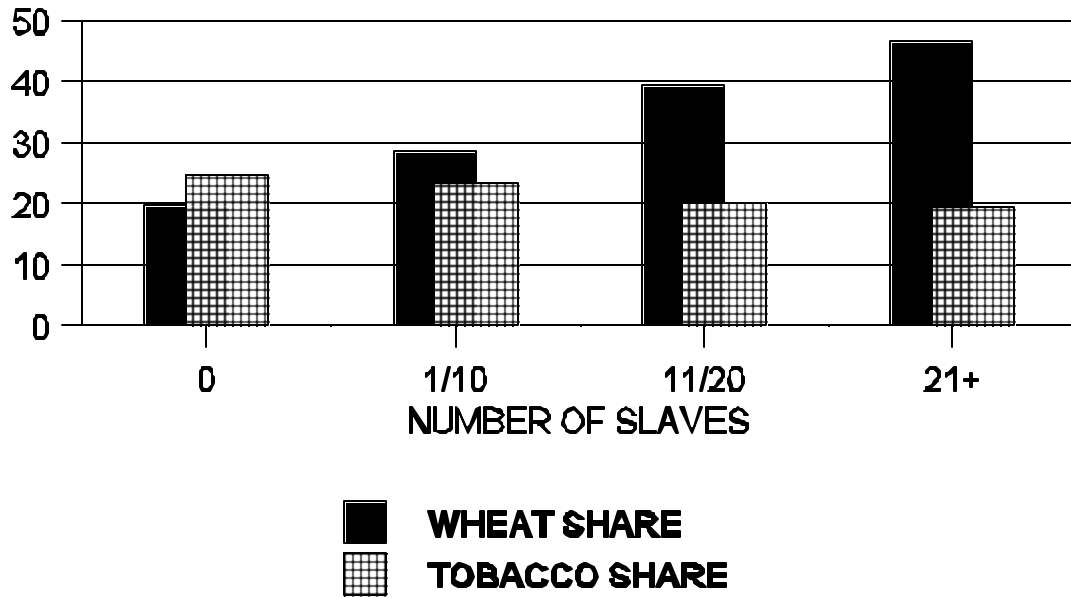


Figure 1B. Shares in Total Farm Output

Virginia Piedmont 1860

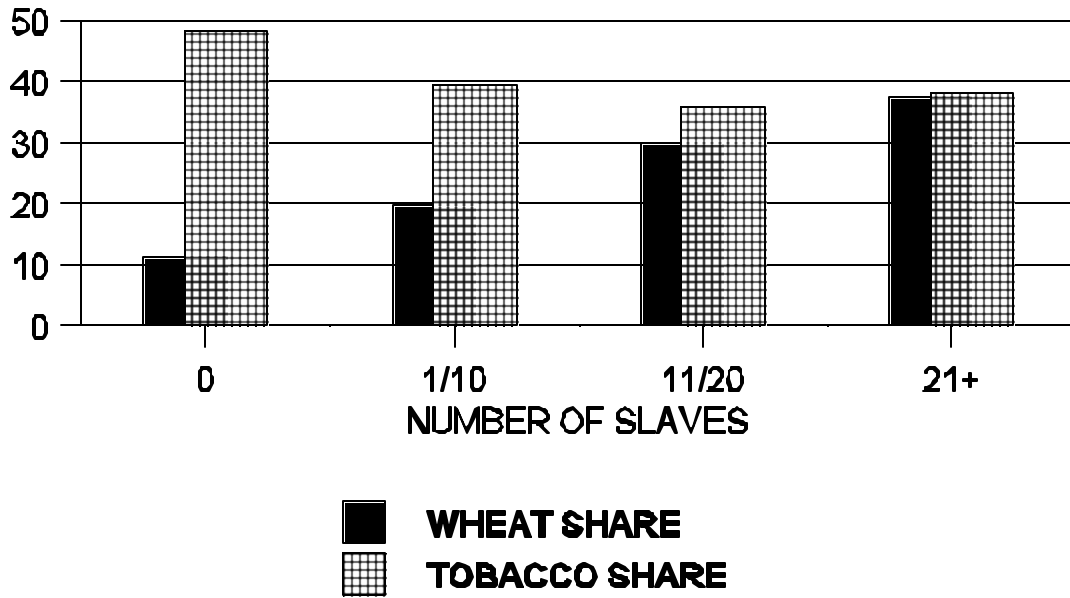


Figure 2A. LAND VALUE PER ACRE 1850

Virginia Piedmont

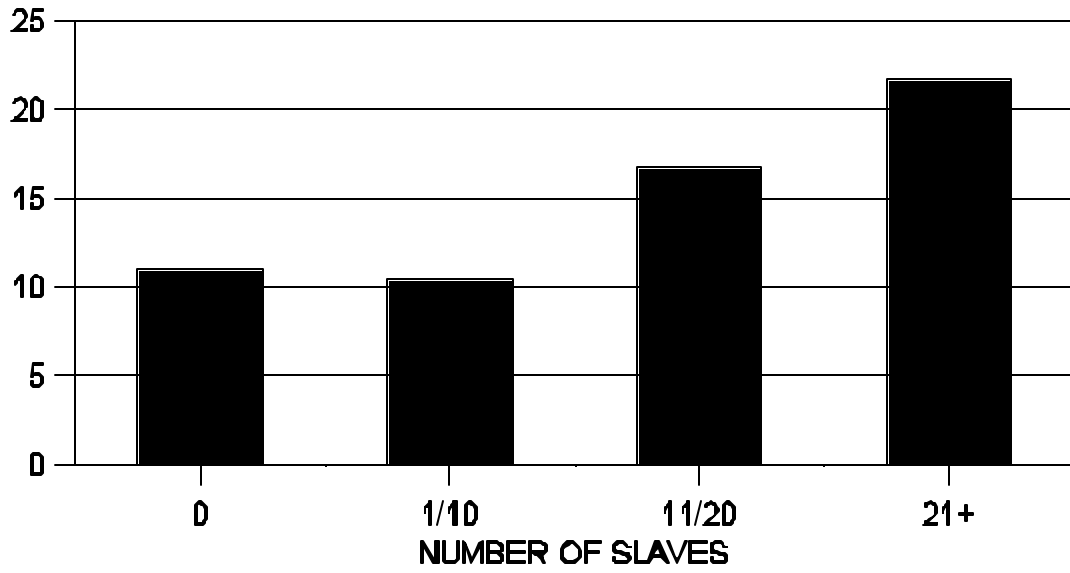


Figure 2B. LAND VALUE PER ACRE 1860

Virginia Piedmont

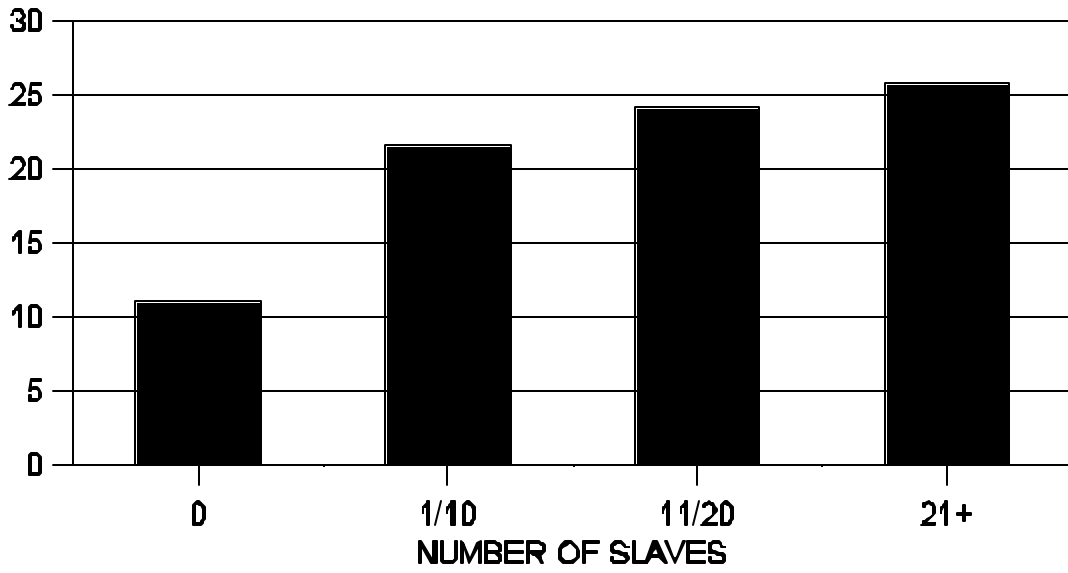


Figure 3. Farm Implements per Worker

Virginia Piedmont 1850-1860

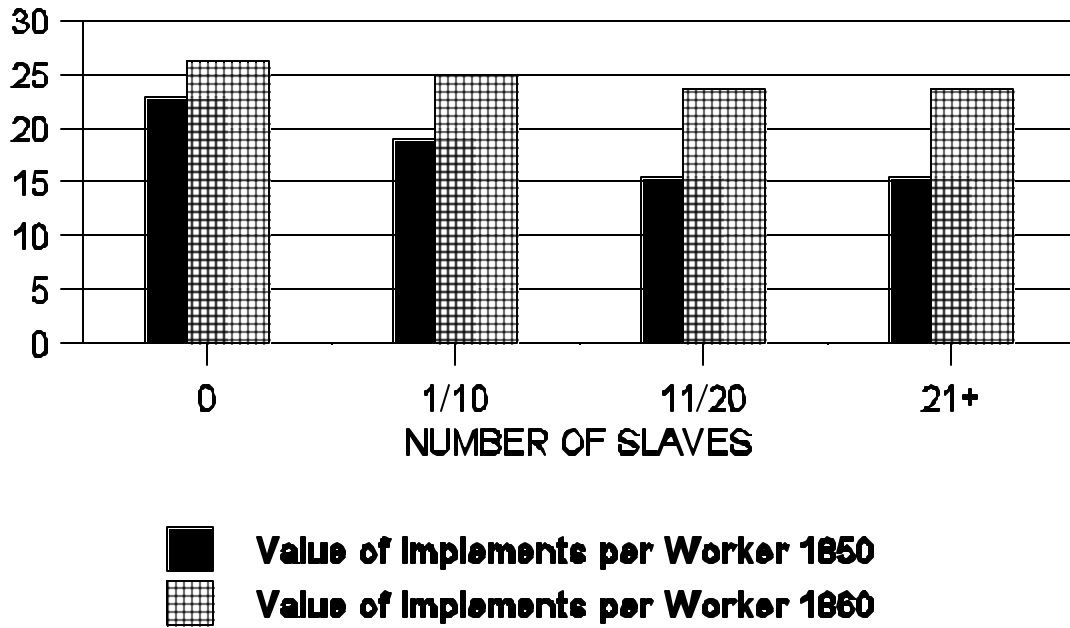


TABLE 1

**Value of Implements and Machinery/Labor^a
Northern States, 1860**

Improved Acreage	0-24	25-49	50-99	100-199	200 & over
Illinois	\$10.91	\$28.09	\$51.81	\$75.19	\$125.00
Indiana	10.28	26.81	44.25	72.46	120.48
Iowa	8.77	26.60	39.84	62.50	111.11
Kansas	10.52	25.32	40.32	66.67	250.00 ^b
Michigan	8.20	21.28	36.23	50.25
Ohio	7.05	29.07	49.50	79.37	111.11 ^b
Wisconsin	11.29	28.65	50.51	71.94	109.89
Northwest	9.48	26.32	45.87	72.99	120.48
Midwest	9.87	26.11	47.39	74.63	125.00

^a "Labor" defined as males, ages 15 to 64.

^b Less than five cases.